ACTION DESCRIPTION MEMORANDUM

FOR

UPGRADING THE SEWAGE TREATMENT PLANT

Authorization No A00890

EG&G Rocky Flats, Inc
Rocky Flats Plant

Operating Contractor for

U S Department of Energy

(May 1990)

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DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
CLASSIFICATION OFFICE

ADMIN RECORD

ACTION DESCRIPTION MEMORANDUM
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1 0 PURPOSE

The purpose of this Action Description Memorandum (ADM) is to provide sufficient information to permit a reasonable determination of the level of NEPA documentation required in compliance with DOE Orders 5440 1C and AL 5440 1B

1 1 Proposed Action

The proposed action is for modification and upgrading of the existing sewage treatment plant (STP), Building 995 Proposed upgrades to the STP are listed in Table 1 1 1 and will provide storage for STP influent and effluent, protection of filters, valving and polymer systems, increased sludge drying capacity, and new STP Nitrification/De-Nitrification capability

Table 1 1 1
Proposed STP Upgrades

Authorization Number	Description
402028	Construction of Holding Tanks for Influent to STP 995
402029	Construction of Holding Tanks for Effluent from STP 995
402048	Sand Filter/Valve Enclosure
402049	Construction of Sludge Drying System for Building 910 and STP 995 (& 402050)
402051	Polymer Feed System Shelter
492250	STP Nitrification/De-Nitrification

1 2 Need for the Action

Influent and effluent tanks are required to meet standards and requirements of a Federal Facilities Compliance Agreement (FFCA) on STP operations pertaining to the plant National Pollutant Discharge Elimination System (NPDES) permit The new standards imposed by the Colorado Water Quality Control Commission also require the improvements outlined within this ADM

An enclosure and shelter for sand filters and valves are needed to prevent freezing of valves and piping during winter weather The enclosure will also protect valves from other related problems such as oxidation and dirt

There are presently sludge drying beds located at Building 910 and 995 These existing beds do not adequately dry the sludge to an acceptable moisture content The presently dried sludge does not meet Department of Transportation Hazardous Material Transportation Act (DOT-HMTA) shipment regulations nor the Nevada Test Site Waste Acceptance Criteria (NTWAC) The lack of sludge drying capacity results in diminished treatment efficiencies which lead to NPDES violations This unacceptably dried sludge delays unloading the digesters in a timely manner, resulting in potential NPDES violations

Proposed modifications to the Nitrification and De-Nitrification processes are need to facilitate bacterial conversion (oxidation) of ammonia to nitrate and nitrite and eventual reduction of the generated nitrates/nitrites The modifications will change the present parallel flow pattern to a more efficient series flow process

If the proposed actions are not implemented, the Rocky Flats Plant (RFP) will not meet standards and requirements of the FFCA on STP operations pertaining to NPDES

1 3 Location of the Action

The Rocky Flats Plant (RFP) is located in northern Jefferson County, approximately 16 miles northwest of downtown Denver, Colorado (see figure 1) The proposed actions are located within Buildings 910 and 995 and north of pond B-1 (see figure 2)

1 4 Concise Description of the Proposed Action

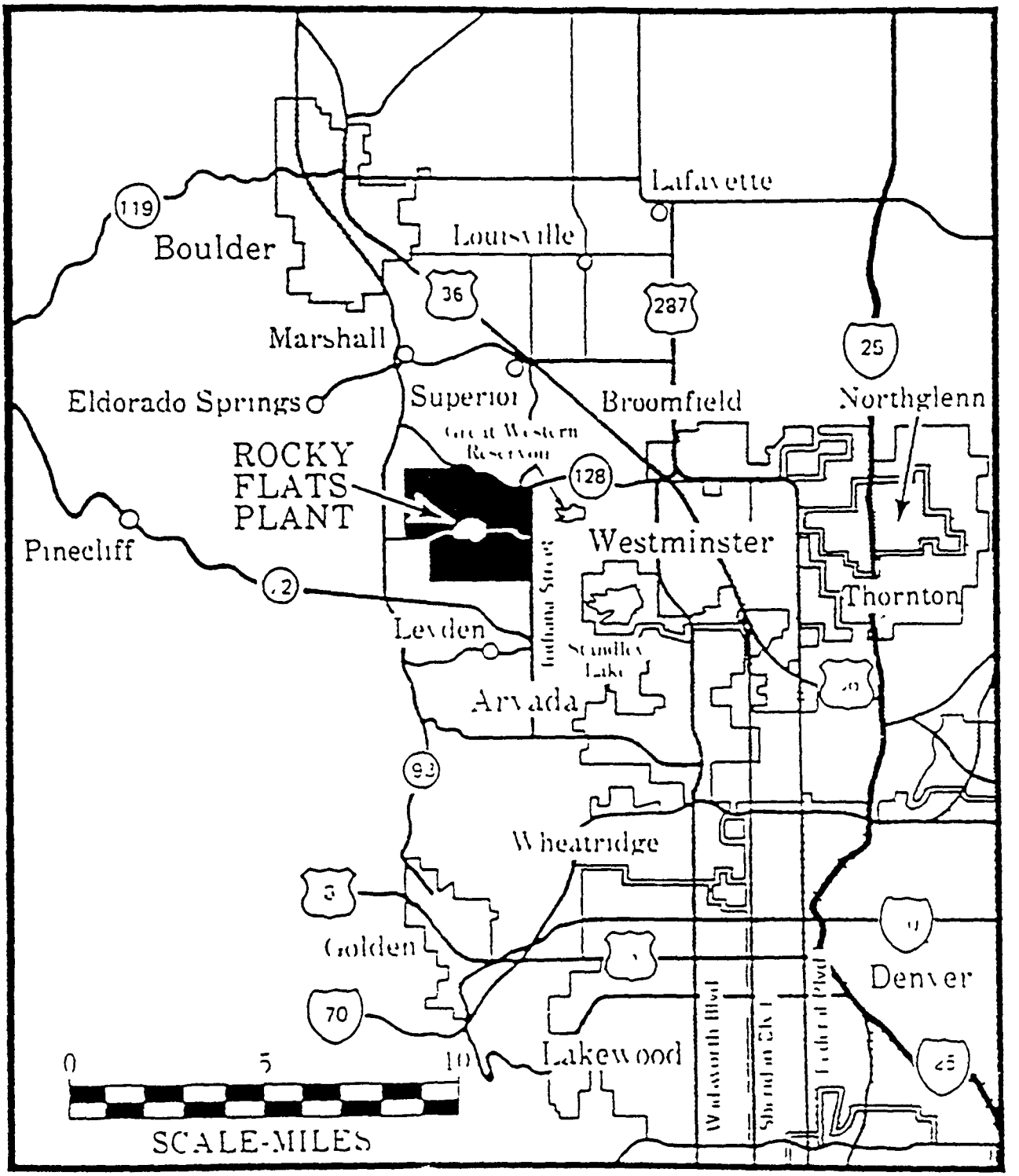
1 4 1 Influent Tanks

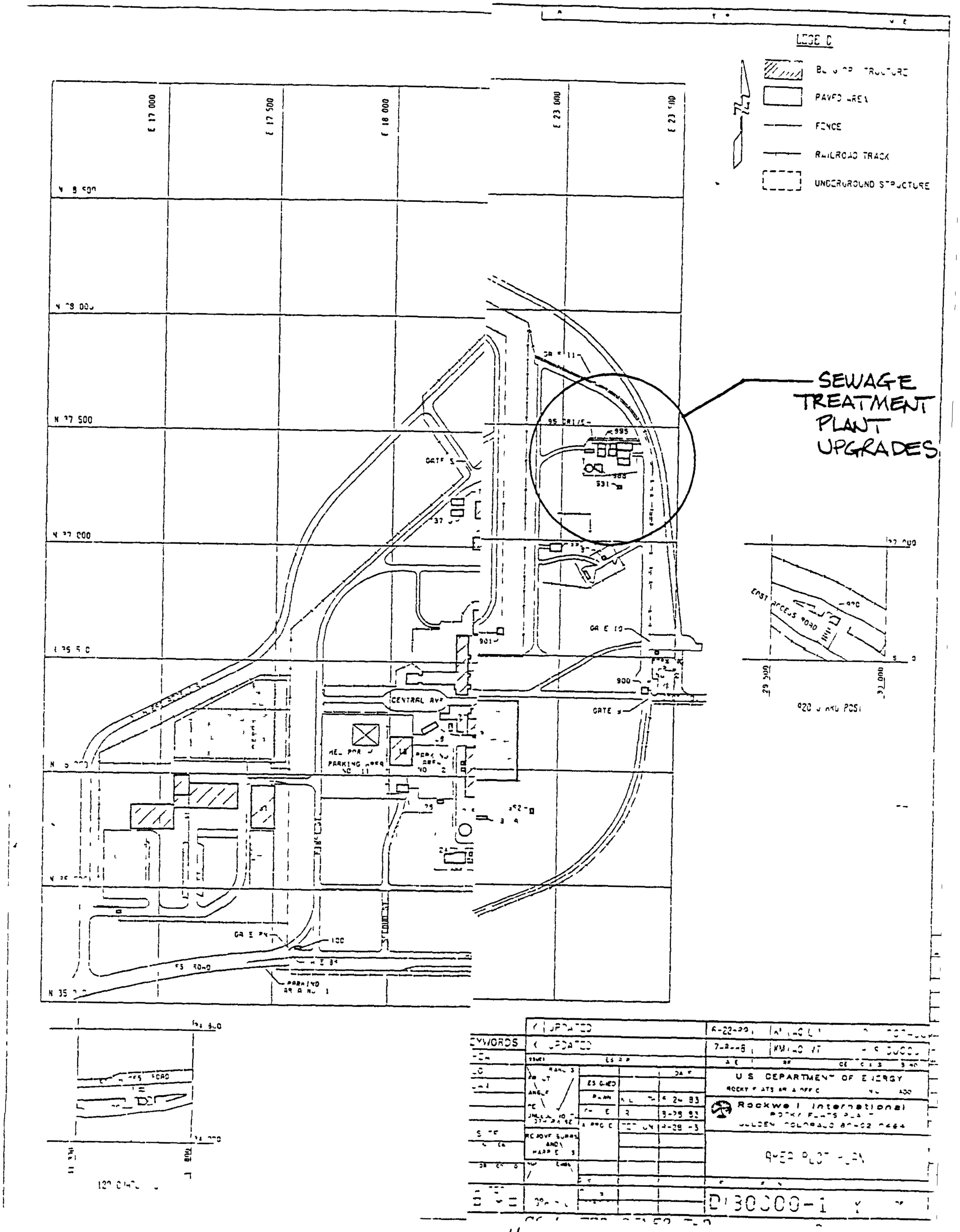
Influent tanks with an aggregate holding capacity of approximately 1,200,000 gallons would be constructed upstream of the treatment facility The influent tanks will allow for collection, containment, and monitoring of sewage for hazardous contaminants, and if detected, contain the sewage until it could be transported to the appropriate treatment facility The tanks would provide a four to five-day storage based on a 250,000 - 300,000 gallon per day flow Flow diversion within the tanks would be accomplished by automatic remote controls to the lift station and valve operators (see figure 2)

1 4 2 Effluent Tanks

Effluent tanks with an aggregate holding capacity of approximately 1,200,000 gallons would be constructed downstream of the treatment facility The effluent tanks would allow for containment of any sewage effluent with hazardous contaminants for future treatment and not discharge downstream The tanks would provide for a total of four-day storage based on 250,000 gallon per day flow The valves, both into and out of the tanks, would be automatically controlled and operated by remote controls located in Building 995 The piping will be routed so normal flow will be continuous into the tanks with the capability to bypass to Walnut Creek Capability to bypass to the Walnut Creek drainage would conform to present operations There will be secondary containment around all effluent and influent tanks (see figure 2)

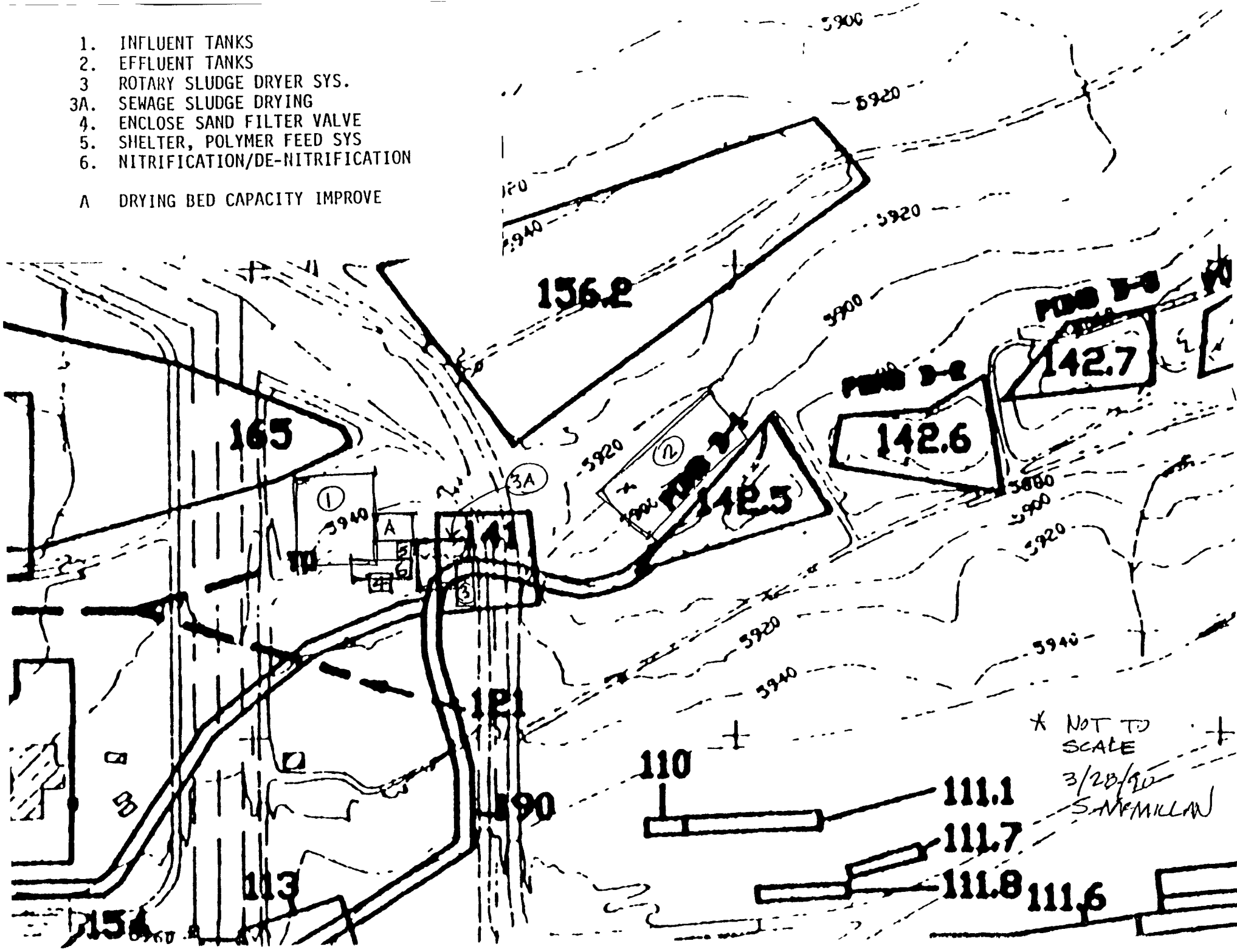
Figure 1
LOCATION OF ROCKY FLATS AND SURROUNDING COMMUNITIES




PAVED AREA
FENCE
RAILROAD TRACK
UNDERGROUND STRUCTURE
E 17 000
E 17 500
E 18 000
E 23 000
SEWAGE
TREATMENT
PLANT
UPGRADES
995
531
GATE 5
GATE 9
900
901
CENTRAL AVE
EAST ACCESS ROAD
U S DEPARTMENT OF ENERGY
Rockwell International

1. INFLUENT TANKS
2. EFFLUENT TANKS
3 ROTARY SLUDGE DRYER SYS.
3A. SEWAGE SLUDGE DRYING
4. ENCLOSE SAND FILTER VALVE
5. SHELTER, POLYMER FEED SYS
6. NITRIFICATION/DE-NITRIFICATION

A DRYING BED CAPACITY IMPROVE



1 4 3 Sand Filter/Valve Enclosure

A new building will provide approximated 530 square feet to enclose the existing sand filters and related valves, piping, etc The new building will be constructed of concrete block utilizing the north wall of the existing pump house as part of the south wall of the new building (see figure 2)

1 4 4 Rotary Sludge Drying System

The proposed action provides for the installation and operation of a gas-fired sludge dryer in the area of Building 995 drying beds (see figure 2) Existing drying beds at Buildings 910 and 995 will be modified to include new concrete bed floors, drainage systems, and bed ventilation systems The proposed sludge drying modifications will reduce drying time by approximately 50% The volume of wet sludge will be reduced up to 4 to 1 and a 5 to 1 reduction may be achieved depending on original water content of the sludge cake The dryers have the capacity to process fifteen (15) cubic feet of wet sludge per hour They are designed to continuously process and reduce wet sludge cake to a granular form

1 4 5 Polymer Feed System Shelter

The proposed water tight shelter will house the new polymer pumping system that will treat digested sludge being pumped to the drying beds The 128 sq ft shelter will enclose the polymer pumping package, supply tank and three 55 gallon drums of polymer The shelter will have heating and insulation for temperature controls and ventilation for removal of fumes (see figure 2)

1 4 6 Nitrification System

Nitrification is the bacterial conversion (oxidation) of ammonia to nitrate (mostly) and nitrite (usually a minor amount) The nitrification process currently being used is arranged in a parallel flow process To allow for a more complete process a series flow will be provided Existing basins will remain, the piping between the basins will be relocated to create a series flow A new concrete pit with a steel grate cover between the two existing aeration basins will be added to the STP Piping will tie into an existing 10" sewage effluent line, adding a 10" gate valve, and installing 2 waste water pumps that will discharge into one of the existing aeration basins

1 5 Alternatives to the Proposed Action

1 5 1 No Action Alternative

The No Action' alternative would be to continue operations at the STP under present capabilities This alternative is not acceptable due to violations of the plant NPDES permit which would occur under present operationing conditions

1 5 2 Effluent and Influent Siting Alternatives

Alternatives to the location of effluent tanks in the buffer zone east of the STP to South of the STP within the core area of the plant is presently under consideration Site dimensions as well as location of Solid Waste Management Units in the area may negate the feasibility of this alternative

2 0 POTENTIAL HAZARDS and CONTROLS

2 1 Construction Issues

This action consists of the purchase, installation and operation of equipment or modification to structures, as specified in Section 1 4

Potential construction within a Solid Waste Management Unit (SWMU) will be done in accordance with all applicable State, Federal and EG&G guidelines

Dust suppression during excavation activities will be conducted in accordance with the provisions at Rocky Flats Operational Safety Analysis #1 (RFOSA 1) Dust suppression for all outdoor construction activities will be in accordance with DOE Order 6430 1A, Division 1, Section 0150-4 3

2 1 1 Radiation Safety and Confinement

Radiation monitoring, soil sampling and laboratory analysis will be performed during construction to detect contamination If radioactive contamination is encountered during construction, contaminants will be disposed as required by DOE Order and RFP procedures Contaminated scrap and discarded materials will be disposed as required by DOE Order and RFP procedures

2 1 2 Explosion

Other than from commonly encountered construction hazards, there are no unique explosion hazards associated with the proposed action

2 1 3 Fire

Other than from commonly-encountered construction hazards there are no unique fire hazards associated with the proposed action Administrative controls will be required to avoid buildup of fire fuel loading at the construction site Construction activities will not affect the current fire detection and suppression features installed in the facility

2 1 4 High Voltage or Current

Voltages and currents used for this action are typical of those used through-out the plant and are common hazards of industry All electrical work will comply with applicable rules of the latest edition of the National Electric Code

2 1 5 Hazardous Waste, Material and Other Substance

Any excavation within a Solid Waste Management Unit (SWMU) will be done in accordance with DOE, CDH, EPA and RFP procedures A narrative of SWMU #141 is given in appendix A

Ground water infiltration, if encountered, will be sampled and tested prior to further action

2 1 6 Mechanical

There are no mechanical hazards associated with the construction of the proposed system other than usual industrial hazards associated with materials transport and handling

2 1 7 Other

There are no unique hazards associated with the proposed action

2 2 OPERATIONAL ISSUES

2 2 1 Radiation Safety and Confinement

The proposed action will aid the confinement of the potential release of radioactive materials to the STP or the B-series ponds The proposed action will provide the capability to hold effluent for analysis as required by the Compliance Agreement with the Colorado Department of Health (CDH)

2 2 2 Nuclear Criticality Safety

This project will not involve fissile material in sufficient quantities where a nuclear excursion is possible

2 2 3 Explosion

Operation of the STP upgrades will not pose any unique explosion hazards

2 2 4 Fire

Operation of the STP upgrades will not pose any unique fire hazards

2 2 5 High Voltage or Current

No unique voltage or current hazards are associated with the operation of the STP upgrades

2 2 6 Hazardous Wastes, Materials and Other Substances

Any hazardous or mixed waste that might be generated as a result of this action will be handled in accordance with the requirements of the Resource Conservation and Recovery Act (RCRA) as implemented in the Colorado Hazardous Waste Regulations (6 CCR 1007-3)

2 2 7 Mechanical

There are no mechanical hazards associated with this action other than usual industrial hazards associated with materials transport and handling

2 2 8 Other Hazards

No other hazards have been identified at this time

2 3 Postulated Accidents

This project involves only hazards of a type and magnitude routinely encountered at RFP and accepted by the public No additional safety analysis is required (per DOE Order 5481 1B "Safety Analysis and Review System") Maximum credible accidents (MCAs) and risk to the public postulated in the Final Environmental Impact Statement for RFP (RFP/EIS-0064) are not impacted or significantly increased by this proposed action

2 4 Impacts from Operational Effluents

The proposed action does not create any new waste streams Actions stated within this ADM are for the control and minimization of potential accidental releases or discharges that may occur from the STP

3 0 REGULATORY COMPLIANCE

3 1 Resource Conservation and Recovery Act (RCRA)

3 1 1 Construction

Any construction or excavation within SWMU #141 will be done in accordance with all State, EPA and RFP procedures Basic requirements for construction within the SWMU will include but are not limited to the following

- o Construction within the SWMU will be done in accordance with a site sampling plan to be presented to the EPA Following review of the plan, site characterization sampling will be completed and a health and safety plan developed for construction work

- o Soil from the SWMU will not be removed from the SWMU Deposition of soil will be done in a manner as to prohibit its spread (by wind, erosion, etc) outside of the SWMU boundary

3 1 2 Operations

Any hazardous or mixed waste that might be generated as a result of this action will be handled in accordance with the requirements of RCRA as implemented in the Colorado Hazardous Waste Regulation (6 CCR 1007-3)

3 2 National Pollutant Discharge Elimination System (NPDES)

The proposed action may impact, although beneficially, (e g , surface water, ground water) protection activities at RFP and may result in modification to the Plant Environmental Protection Agency National Pollutant Discharge Elimination system permit

3 3 Clean Air Act (CAA)

Airborne emissions of hazardous materials may be impacted by the proposed action (e g , emissions from the Sludge Drying systems) An application for approval by the Environmental Protection Agency of new construction may be required under the Clean Air Act as implemented in 40 CFR 61, Subparts A&H Air Pollution Emissions Notices (APENs) may be required by the Colorado Department of Health (CDH) for any new air emissions points for toxic materials

3 4 NEPA Specific Considerations

The proposed changes to the sewage treatment plant are located within the core area of the plant and are categorized as further development within Rocky Flats Plant (RFP) site Proposed location of the effluent tanks is east of the existing STP and north of pond B-1 Neither location will pose an adverse affect on

- o Wetlands
- o Floodplains
- o Historical, Cultural or Archaeological Resources
- o Threatened and Endangered Species

Consultation with the U S Army Corps of engineers was conducted in the fall of 1989 The general location of jurisdictional wetlands on plantsite were characterized It has been subsequently determined that the proposed action is not located in, nor in a position to have an effect upon, known jurisdictional wetlands

The proposed actions are not located in a designated floodplain

In a letter to A E Whiteman, Manager of the Department of Energy Rocky Flats Area Office, the Colorado State Historical Preservation Officer, B Sudler, stated that "There will be no effect to significant cultural resources by further development within Rocky Flats Plant, provided [two specified sites] are avoided" These sites were identified in *An Archaeological and Historical Survey of selected parcels within the Department of Energy, Rocky Flats Plant,* and will not be affected by the proposed action

The USFWS has identified the bald eagle and the black-footed ferret as endangered species of interest at the plant This action would not be considered to impact the bald eagle habitat Surveys for black-footed ferrets would be required only if prairie dog colonies would be affected The proposed action is not to be in an area of current or potential colonization by prairie dogs

The proposed actions will not impact Indian lands or religious sites

The proposed actions are not part of a larger proposed action that is the subject of an Environmental Assessment of Environmental Impact Statement

4 0 ADDITIONAL DOCUMENTATION

This project will comply with standards and requirements stated in the FFCA on STP operations pertaining to the Plant NPDES permit

Standard operating procedures will be written for any new equipment and/or systems

5 0 FISCAL AND SCHEDULE INFORMATION

The total estimated cost of this action is $8 7 million

Financial Schedule

Fiscal Year	TEC ($K)
1990	$ 400
1991	$ 7,300
1992	$ 1,000

The funding source of the proposed action is a Line Item

The are no previous titles of the proposed action